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Monterey, California, Naval Postgraduate School

Naval Postgraduate School

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Computer and Information Services BULLETIN

In This Issue

are articles of interest to

All users—e.g., information on campus software licenses, in place and proposed; introduction of mosaic, the latest hypertext tool for Internet browsing.

Power users— e.g., the availability of time on a remote Cray C-90 or massively parallel processors such as Intel's Paragon, Connection Machines' CM-5 or Kendall Square Research's KSR1 (all installed in DoD sites).

I N S I D E

Supercomputing

Cray Time Limits

Following up on a request made at the Computer Users Council meeting of 5/24/93, we have instituted a 20 minute limit for interactive jobs on the Cray Y-MP EL

sirius.cc.nps.navy.mil.

Long running jobs should be placed in one of the batch queues (prem, reg, or econ, depending on how quickly you need the results). This will ensure that interactive users who are analyzing or debugging code will have higher priority and faster response.

Submitting a batch job is quite easy. Say that you have an executable named 'a.out' in your home directory that you want to execute in the 'reg' queue. The program requires less than 9Mw of storage and will take less than 1 hour (3600 secs). to finish. (You can find out how much memory your program requires by using the size(1) command. You would create a file containing the text shown below. (This file is called a script).

```
# QSUB -q reg -lT 3600 -lM 9Mw  a.out
```

If this file is called 'myjob.nqs' you would then submit it with the following command (note that the '%' sign below represents the Unix prompt):

```
% qsub myjob.nqs
```

You may check on the status of your job with the following command:

```
% qstat -a
```

When the job has finished, two files will be placed in the directory from which you entered the 'qsub' command; in this example they would be called 'myjob.nq.oxxx' and 'myjob .nq.exxx'. The files contain the standard output and standard error output of your program. In place of 'xxx' you'll see the sequence number of your job.

Note that *any* valid Unicos command may be included in your script: you may move files, create directories, or even send mail. For more details on how to use qsub, read the qsub(1) manual page or come to one of the Center's talks on how to use the Cray.

Mike McCann (mccann@nps.navy.mil)

High-Performance Computing: Off-Campus

Are your computer problems so large and complex that you need access to more Cray power than that available on-campus, or require massively-parallel processors such as Intel's Paragon or Connection Machines' CM-5? Then you will be very interested in the following opportunity open to Navy users.

DoD's High Performance Computing (HPC) Modernization efforts in FY93 have resulted in the following range of vector and scalable resources being made available:

- Army Corps of Engineers Waterways Experiment Station (CEWES), Vicksburg MS, which has a Cray Y-MP/8128 and will be installing a Cray C-90/16512.
- NRL: CM-5
- NCCOSC/NRaD: Intel Paragon
- ARL/Aberdeen: Kendall Square Research KSR1
- Army HPC Research Center/Unv. of Minn.: CM-5
- Wright Labs/Dayton: Intel Paragon
- Air Force Maui Optical Station: TBD

The Navy has a 30% share of the resources on these systems (slightly less for the CM-5s). Dates of initial availability of the machines vary somewhat, but the Cray Y-MP at CEWES and some of the parallel machines are available now. CEWES requires a Userid Application Form.

If you want to pursue the opportunities at this or any other sites please contact Mike McCann (mccann@nps.navy.mil or In-102A, x2752) for further information. The Naval Advisory Group for HPC (NAGHPC) is also soliciting users' estimates for HPC over the next two years and five years out.

Doug Williams (dgwilliams@nps.navy.mil)

Software Licenses

The table on the following page lists existing NPS site licenses and volume purchase agreements.

Additional Licenses Being Procured:

1. MATLAB (MathWorks, Inc.) for 150 simultaneous users on four platforms (SPARC10, HP700, SGI, and DEC VAXStations) launched by three servers.
2. 3270 Emulation for LAN Workplace (Novell, Inc.). Educational site license for 1000 users.
3. S-Plus (Statistical Sciences, Inc.). Site license for four servers and architectures (Sun, HP, SGI, and PC/Windows).
4. WordPerfect Office v. 3.1 and 4.0 for DOS, Windows, Unix (variable quantities).

Suggestions? We solicit departmental and individual user recommendations on packages for the future. Please send them to code 51, In-130, x2574, or e-mail to address below.

Doug Williams (dgwilliams@nps.navy.mil)

Computing Advisory Board

This past spring, the NPS Information Resources Management Executive Board (IRMEB), which consists of the Superintendent, Provost, Deans, and other Line Managers approved a reorganization of the Computing Advisory Board (CAB). The primary function(s) of the CAB are to prepare recommendations to the Dean of Computer and Information Services (Code 05) and the IRMEB in the areas of strategic campus computing goals, mid-range plans and priorities necessary to reach these goals, and current computing policies.

The CAB, as now structured, consists of a Chair (Code 05A, Professor Art Schoenstadt); the Assistant Director of Programs (Code 03A, CDR Denny

Vendor and Product(s)	Platform	Contact	Comments
Borland Most products (e.g. dbase III/IV, Quattro Pro, Paradox, Object Vision, Reflex, Sidekick, C++, Turbo C++, Turbo Pascal; DOS and some Windows).	PC	Joe Rogers, In-104, x3660	Licensed for 700 PCs, 2800 users. Copies provided to LAN administrators.
IBM Higher Education Software Consortium (HESC) RS/6000 software	RS/6000 and AIX	Jim Hart, In-106, x3661	Covers 21 RS/6000 packages, including AIX, Fortran, Ada, Pascal; free or for nominal fee.
InterCon Systems TCP/IP Connect II	Mac	Students: NPS Computer Club, Chairman, Mac Users' Group. Others, Roy Romo (In-132, x2004)	Licensed for 100 copies. TCP/IP for Macs including FTP and terminal emulation allowing users to open multiple Telnet sessions as a range of DEC and IBM terminals connected to Unix-based hosts and the Amdahl (IBM-compatible mainframe).
NCAR NCAR Graphics	Unix	Chris Essert In-114, x3121	Unlimited distribution. National Center for Atmospheric Research (NCAR) Boulder CO. Unix package offering full graphics, contouring, mapping, etc. Ver. 4.0 will add interactive capabilities (Fall '93).
Novell, Inc. LAN Workplace for DOS	PCs on Netware LANs	Kathy Strutynski GL-375 x2696	Netware and TCP/IP services for DOS and Windows 3.x; up to 32 concurrent Telnet or FTP sessions with different hosts. Copies provided to LAN administrators.
Novell, Inc. Netware 3.11 and 4.0	PC, Mac, Unix	Kathy Strutynski GL-375 x2696	Eight server licenses, all assigned. Other departments can buy at reduced cost.
Simware SIM/PC 6.0	PC	Distribution: Irma Bozardt, In-147, x2731. Technical: Roy Romo, In-132, x2004	300 copies. Full screen IBM 3270 support for dial-up PCs. Documentation on distribution disk, also on line from VM with "SIM60DOC" command.
Sun Microsystems ScholarPac, including Solaris, Fortran, C, C++, PHIGS, XGL, OpenWindows, Pascal.	Sun with Solaris	Jody Schivley, In-110, x3432	Unlimited, but users must register system to receive upgrades.
Autodesk AutoCAD (v. 11 or 12)	PC, Mac, Unix	Lois Brunner, In-111, x3460	Educational grant for full AutoCAD (Basic plus options) for all platforms including HP, Sun, SGI, and documentation.

MacMillan); the Chairs of standing subcommittees on Desktop Computing (Professor Chuck Wash), Large-Scale Scientific Computing (Professor Russ Elsberry), Networks and Infrastructure (Professor Tom Halwachs), and Administrative Computing (Mr. Tracy Hammond); and a Faculty Council Representative (Professor Jeff Leader). The Library Director, the Computer Center Director, and the Dean of Faculty's Advisor on Procurement and Computer Maintenance advise the CAB.

The CAB has already tentatively recommended to the IRMEB several priority areas where the CAB believes it should concentrate its efforts. These areas include maximizing the effectiveness of existing computing assets; providing wider dissemination of information on available software; providing of standardized, seamless, cross-platform e-mail; developing of an enterprise data base architecture; and establishing the proper mix between centralized and decentralized computing assets and support.

The CAB anticipates will continue to develop and refine its recommendations in these areas over the coming months. All members of the NPS community are encouraged to communicate any suggestions, observations or concerns they may have in these areas, or any other computing-related areas, to any member of the CAB.

Prof. A. Schoenstadt, Chairman, Code 05A

Network

E-Mail Addresses

The installation of the Sun workstations, in the public areas supported by the Computer Center, has caused some confusion about valid electronic mail addresses. Let me help you make sure your e-mail reaches you.

Workstation network addresses are of the form

userlogin@homehost.dept.nps.navy.mil

which may be shortened to user@nps.navy.mil. The "userlogin" is the same userid that you use to log onto the workstation, usually your first and middle initials followed by your last name, to a maximum of eight characters total. The "homehost" is where your home directory resides, and the "dept" is the department that administers the workstation. For public UNIX accounts administered by the Computer Center, "CC" is the department code. You can see why it is easier to use the form

userlogin@nps.navy.mil

and let the routers on Campus deliver your mail to the correct place.

Mainframe network addresses are of the form

userlogin@vm1.cc.nps.navy.mil

The "userlogin" is 4 numbers followed by a "p". The part following the "@" must be

vm1.cc.nps.navy.mil

You cannot shorten or truncate the mainframe's hostname, and you cannot use a UNIX userid with the VM hostname.

If you prefer to receive your mail on the mainframe, but want to use your name as an e-mail address, see Jody Schivley in In-110 to set up a "name alias" for incoming mail. You can have all mail sent to you in the form "name@nps.navy.mil" delivered to your mainframe userid, if you tell Jody that your preferred mailbox is your mainframe userid. *Unless you register with Jody, you must use the real mainframe address, unabbreviated.*

You may never mix your "name" userid with "vm1.cc.nps.navy.mil", the VM hostname.

- "name" always goes with "nps.navy.mil".
- A numeric userid is the only login identifier ever valid with "vm1.cc.nps.navy.mil".

Summing up:

name@sagan.cc.nps.navy.mil
: always correct for a user with login "name" with home directory on "sagan"

name@nps.navy.mil
: correct for a user with login "name" on any public UNIX workstation

1234p@vm1.cc.nps.navy.mil
: always correct for mainframe mail

name@nps.navy.mil
: correct for mainframe mail if you have registered "name" as a name alias

name@cc.nps.navy.mil
always wrong!!!

name@vm1.cc.nps.navy.mil
always wrong!!!
Caroline Miller, (2221p@vm1.cc.nps.navy.mil)

Browsing the Internet with Mosaic

Many users are impressed, and rightly so, by the amount of information available via the Internet. But many also realize that incredible volumes of information, by themselves, are worthless. It is well-organized documented information that is priceless. So how do you find what you want on the Internet?

This is not a new question, so the answer has become pretty sophisticated by now. Not long ago, the answer was "Find a guru", i.e. some programmer who sat up night after night exploring the world's anonymous ftp sites. Then came archie. Archie is a program (written at McGill University) which would regularly search every anonymous ftp site it knew about, and record the listings of every directory. Then all you had to do was log onto the computer at McGill and ask it where your favorite program was kept; then you would ftp to that site and download your files.

And within a year or two, the process began with: Step 1: Get in line to get onto the computer at McGill!

The next step was Gopher; it allows users to browse through the Internet and retrieve any program they find as soon as they find it—without starting up a separate ftp session. Also, much can be read online. But gopher doesn't know as many sites as archie does.

And now there's Veronica (Very Easy Rodent-Oriented Net-wide Index to Computerized Archives) (yes, this is Unix; Unix is a culture unto itself), which lets you search the *contents* of millions of files on thousands of machines for a phrase of interest (archie searches only for file names).

Now you can browse the Internet (aficionados call it *surfing* the Internet) via a slick graphical interface, thanks to Mosaic, from the National Center for Supercomputer Applications (NCSA). We've installed this program on the SGI machines in the VisLab and the seventeen Suns in In-141. To start it, type

xmosaic

at the Unix prompt. In a few moments, (ignore the error messages that appear in the Unix window) you'll be looking at a hyper-text document, which means that you can click on the colored or highlighted or underlined words, and you will immediately be taken to a document which gives you more information (in many cases including detailed full-color graphics) about that word. (Watch the Document URL, at the top of the window, to see where in the world you're connected now!) The Mosaic interface even has an on-line tutorial and a FAQ (Frequently Asked Questions) list in addition to the online hypermedia documentation.

A small caution: search is available within the File menu button in mosaic. If you make a mistake in typing in your search string, the backspace key will not let you back up and erase your error. The simplest thing to do is click on the Reset button at the bottom of the search window.

Mosaic is more than a convenient interface to Archie, Gopher, and Veronica. It is a World Wide Web client. This world-wide project is a global information retrieval initiative aiming at giving universal access to a large universe of documents. As easy as dropping a menu item, you can connect to the electronic book review journal published at Bryn Mawr, the latest announced non-linear physics papers (supported by Los Alamos), the images for Art History at the Australian National University, or the Electronics Visualization Lab at NCSA. Hyper-media software has grown dramatically in the last few years as it is seen to be the ideal way of organizing extremely large bodies of information. This type of interface gives you "The Big Picture" and then allows you to set your own pace as you descend into a more and more detailed knowledge of a particular subject. Mosaic is a great way to find out what's already known about your thesis topic!

Questions? Send email to
Matthew Koebbe, (phaedrus@nps.navy.mil)

Xmodem, Ymodem, Zmodem

If you use any of these file-transfer protocols: they are now available on the Computer Center public

Suns in In-141. To find out more: at the Unix prompt, type *man sz* to learn about sending, or *man rz* for receiving.

Larry Frazier (frazier@nps.navy.mil)

Workstations

Background Processes

Unix makes it easy to start a long-running process (job) and have it keep running after you log off. It's also simple to give such a process a low priority so that it doesn't conflict with work being done by anyone who later logs on to the same machine. As this is written, there are processes running in the background of six of the public Suns in In-141. This would be fine, except that they are not running at low priority. It's time to publish the Center's policy on background processes.

1. The background process must be submitted with the nice command:

nice [-number] command [arguments]

The nice number is one of the factors used by Unix to determine a process's scheduling priority. Scheduling priorities range from 0 to 127. The higher the value, the lower the process's priority, and the lower the value, the higher its priority. An appropriate nice value is 19 (the process will run only when nothing else in the system wants to).

2. If a background process interferes with someone logged on, that process will be killed and mail will be sent to the owner of the background process.

Jody Schivley, (jschiv@nps.navy.mil)

Screen Savers

Many users of PCs and workstations have asked us for sources of free (or almost free) software packages which function as so-called screen savers. Here are some places to find them.

Internet

A rich vein of such software is available for down-loading from Internet sites using our local archie client.

(1) From the Center's Sun workstations, at the Unix prompt, type

archie screen

Archie will search for 'screen' matches and will list relevant anonymous ftp sites. Pick a site and ftp there, e.g., ftp rigel.acs.oakland.edu. Login as anonymous and when prompted for your password give your e-mail address, e.g., romo@nps.navy.mil.

Check the list archie gave you to find the correct sub-directory and the files you want. A screen saver is a graphics file, so remember to enter

binary

before the command to get the file.

get *filename.filetype*

(e.g., get dazzle50.zip)

If you have retrieved a zipped file you can use PkUnzip to uncompress the file—then you can read the documentation.

(2) If you don't have an archie client on your Unix network (i.e., if archie doesn't work for you): from any workstation that has TCP/IP access on the Internet you can telnet to archie sites such as:

archie.unl.edu	(USA[NE])
archie.ans.net	(USA[NY])
archie.rutgers.edu	(USA[MD])
archie.sura.net	(USA[NJ])
archie.mcgill.ca	(Canada)
archie.funet.fi	(Finland/Mainland Europe)
archie.au	(Australia)
archie.doc.ic.ac.uk	(Great Britain/Ireland)

For the most up-to-date list, send mail to an Archie server; the only contents of the message should be the command

servers

Note that archie via ftp is much slower than if you can access it directly.

Local Sources

(1) Sun/Unix

To access the Sun screen saver, click the right mouse button on the background, select Utilities, and then select LockScreen, or simply issue the Unix command xlock. (POC: Jody Schivley, In-110, ext. 3662 or Larry Frazier, In-113, x2671)

(2) PCs

(a) Access local PC Bulletin Board Systems such as cricket. (POC: NPS Computer Club for details of this and other sources)

(b) Obtain a copy of a 3.5" floppy disk from Irma Bozardt (IN-147, ext. 2731) which contains some of the most impressive, creative graphics packages downloaded from the Internet.

Roy Romo (x2004, romo@nps.navy.mil)

Retrieve Many in vi

This article assumes that you know that vi is the Unix editor, and that you know how to cut, copy, and paste (vi calls them delete, yank, and put).

To review: typing *dd*, moving somewhere else, and typing *p* will delete a line of text and put it back on the line below the cursor's location when you type the *p*. Similarly, a user can use *yy* and *p* to yank (copy) and put a line. Now that yanked line goes into a temporary buffer. It turns out that vi supports 26 named buffers and nine numbered buffers in addition to this one unnamed buffer. The named buffers are called "a" through "z" and the numbered buffers are "0" through "9", but the important thing is that ***the editor uses the numbered buffers automatically for deleted text storage***!

What's so exciting about this? This means that you can recover the last 9 deleted blocks of text. Typing

"*n*p

where n is a number between 1 and 9, will deposit the nth previously-deleted block of text starting after the cursor. And yes, I'm typing a double quote, a number, and the letter p.

That's the item. Anyone who's spent any time with vi has deleted something, moved to its intended new location, noticed something on the way that needs to be deleted, and realized with a sinking feeling that the previous (needed) deletion is no longer accessible by typing *p*. Now there's "2p.

For the pros: Accessing the Named Buffers.
Pros know that *yy* yanks a whole line, but *y2w* will yank the next two words. Following such a yank, *p* will place those two words after the cursor. To save these two words in a named buffer (say the 'a' buffer), you'll type *"ay2w* and later type *"ap* when you need them.

For explanation of the above, see Larry Frazier, In-113, or Matt Koebbe, In-148.

Matt Koebbe, (phaedrus@nps.navy.mil)

Mainframe

Automatic Inclusion of RACF Passwords in JCL

RACF, the new MVS security software, keeps unauthorized people from accessing your MVS data sets, via a password coded on the job statement. However, storing MVS source files with the password inserted leaves the password vulnerable. You have to remember to remove it before printing the file or sending it to someone else.

The SUBMIT command has been modified to temporarily insert your MVS password into the source file, submit the file to MVS, and then remove the password. The source file can be printed or passed around without revealing your MVS password.

If you have already established an MVS password, search your A-disk for a file called PROFILE MVS. If it does not exist, use XEDIT to create a file by that name and type your MVS password on the first line.

If you have never selected an MVS password, run the MVSHELP EXEC: just type in MVSHELP. A menu with 10 options will appear. Select Option 10 to Set the MVS Passwords. This will open a new menu. Pick option 1 to set your MVS password. Don't use your VM/CMS logon password or your Unix password.

Next, remove the password from your job statement in all your MVS programs. The new format of the job statement is:

```
//MYJOB JOB USER=S1234,CLASS=A
```

Programs with a password included on the job statement will continue to run, but remember, your passwords are vulnerable if you store them in the job statements in your programs.

Helen Davis, (davis@nps.navy.mil)

MVS Data Set Deletion & Backup

All the MVS data sets which are allocated to disk volumes using the UNIT=SYSDA parameter are managed by the Hierarchical Storage Manager (DFHSM). As the disk volumes (3380's) become full, DFHSM migrates data sets which have not been used in four days from the primary volumes to migration level 1 volumes (other 3380's) where they reside in a compacted form for eight days or longer. If they are needed, they will be recalled to a primary volume. If they aren't needed, they will be migrated further to a migration level 2 volume (3480 tape cartridge). Accessing these tape cartridges is now automated which makes any data set accessibility almost as quick as if it were on primary DASD, and makes it available on holidays or at other times when no operator is on duty.

If a data set is not opened in two years, it will be deleted. Currently, the first day of each quarter is the date chosen for this deletion. Any MVS data set which has not been used since September 27, 1991, will be deleted on September 27, 1993. A list of the next data sets to be deleted is placed in the Consultant's Office approximately one month prior to the end of the quarter. Your own data sets can be listed from VM with MVSHELP selection (9) Expiring MVS data sets. Computer Center staff will assist users with archival of data sets which they wish to retain after the two year period. Responsibility for the archival and retention of the resulting tape must belong to the individual, but a procedure has been set up and tape cartridges will be provided by the Computer Center. A handout describing the straight-forward process, and assistance are available from Linda Mauck.

Another function of DFHSM which we have implemented on MVS is backup. Each night DFHSM creates a backup copy of any MVS data set which was changed during the day. The backup copy of data sets is saved up to one year for students and two years for faculty. The restoration of a backup copy of a data set is similar to a recall of a migrated data set, but can only be done by one of three Computer Center staff personnel. For further information, please contact Linda Mauck, In-105, 656-2651.

Linda Mauck, (0072p@vm1.cc.nps.navy.mil)

Knox Library

The Electronic Librarian

The Dudley Knox Library is pleased to announce that the NOTIS circulation system is available online, effective 28 July 1993. As a result of this automated approach to checking books out, NPS faculty, students, and staff will be able to check the status of a book via BOSUN, the online catalog.

Other improvements in the Library's services include better control of our holdings, immediate information online, and increased access to resources. It will take a few months to convert all of our manual circulation records to the new online system. So, there will be some delay in the availability of online information on all of the material currently checked out.

General circulation will be converted to the online system first, followed by the Reserve collection, and materials in the Research Reports collection. During the transition it will be necessary to retain your old Library cards (with the metal plates) as well as a new card with a barcode number, which will be issued at the Circulation Desk.

You can help expedite the transition by returning all Library materials you are not currently using. This will reduce the number of outstanding records to be transferred to the online system. Please be patient with us during the transition, as Library staff gain experience with new online procedures.

In coming months we expect to be implementing additional modules of the NOTIS integrated library system. After circulation, the acquisitions and serials modules will follow. We expect to follow that with the authorities module for better cataloging of our materials. At that point, the entire NOTIS integrated system will be fully operational.

We also anticipate being able to announce the availability of dial-in access to the online catalog in the near future. Meanwhile, all NPS faculty, students, and staff can access the Library's holdings online by using any mainframe terminal (and most termi-

nal emulators) on campus. For questions regarding this service, contact Doug Gould, x3342.

Thank you for your support!

Doug Gould

CD-ROM Databases

The Research Reports Division has a selection of CD-ROM databases available for direct use by authorized students, faculty, and staff. The number and subject content continues to grow; presently we have the following databases available:

Joint Warfighting Publications of the Armed Forces (JEL) — a full-text collection of a number of Joint, Army, Navy, Air Force and Marine Corps documents useful in the development of military policy and doctrine. This database is produced by J-7 (JCS).

Naval Tactical Information Compendium, Series A — this series contains a variety of classified and unclassified databases, including the Navy Lessons Learned Database (NLLDB), Joint Universal Lessons Learned (JULLS), and the Fleet Tactical Library.

Naval Tactical Information Compendium, Series B — this series will eventually contain all Naval Warfare Publications (NWPs), but at the present has a good selection of unclassified NWPs and a handful of classified NWPs. Each release contains more documents.

Naval Computer and Telecommunications Command — this prototype release contains a number of Naval Telecommunications Publications (NTPs) and NCTC instructions relating to computer and telecommunications management, procedures, and security.

Larry Gaber

Computer Security

Controlled Access Protection (CAP) / C2 Functionality

Department of the Navy computer systems processing Level I (Classified) and Level II (Sensitive-Unclassified) information were required to implement Trust Level C2 or C2 functionality by the end of calendar year 1992. NPS systems which have not achieved this level of trust are deficient in meeting the Navy's requirements. C2 is the certification that a certain level of protection has been achieved through the implementation of a specific set of safeguards, among which are:

1. **Identification and Authentication** - The requirement that all users be identified before accessing the operating system or any application programs. Passwords or equivalent mechanisms are also required to authenticate the user's identity. In distributed or other systems with multiple processing components, it is necessary for the user to be authenticated to each component that provides service to a user.

2. **Auditing** - C2 functionality requires the system to be able to create, maintain and protect from modification, unauthorized access, or destruction an audit trail of accesses to the objects it protects. Events which may be recorded include the use of passwords, accessing system files or applications, actions taken by computer operators and system administrators, and other security-relevant events. It is an administrative decision as to which events are audited during system operation.

3. **Discretionary Access Control** - Discretionary access controls are a means of restricting access to objects based on the identity of the user and the groups to which they belong. The controls are discretionary in the sense that a user with a certain access permission is capable of passing that permission to any other user (unless constrained by other controls). Discretionary access controls are not intended to provide protection against a determined malicious attack, but are useful in protecting information in an environment of cooperating users against users browsing through other's files, or preventing accidental disclosure or destruction of information.

4. **Object Reuse** - The characteristic of system operation which prevents residual information left by one user's process from being accessed or otherwise used by another user when the object containing that information is reused

These requirements are implemented most efficiently if integrated into the Life-Cycle Management (LCM) process during the initial planning phase of a system. Otherwise these features must be added on at significantly greater cost in resources and manpower.

Virus Update

Version 106 of the McAfee anti-virus software is now available in the **M:\virus** directory of the Banyan network, and, for Novell network administrators, in the CCTR1\ADPSO account. Contact Joe Rogers (ext. 2036 or 3458) or Jeff Franklin (ext. 2469) for the password to the CCTR1\ADPSO account.

Jeff Franklin

Computer Center Mainframes

The Center operates (1) An Amdahl 5995-700A (384 MB processor storage, 1 GB expanded storage) loosely coupled with an IBM 4381 Model Q13 (24 MB). Interactive computing is provided under VM/XA CMS, batch processing under MVS/ESA with JES3 networking. (2) A Cray Y-MP/EL (8 cpus, 2 GB memory, running Unicos).

Hours of Operation

VM & MVS	24 hrs/day, 7 days/wk	
	656-2713: status recording	
NOTIS	M.-Th.	0700-2300
(Library)	Fr., Sa.	0700-1800
	Sunday	0700-2200
Consulting	Mon-Fri	0900-1130
(In-146 ext 3429)		1315-1545
Dial-up	656-2709 up to 9600 bps	
TAC Access	647-8422	

Terminal Clusters (Open)

In-141	17	Sun SPARC 10/41
	5	3472G Graphics/APL
	2	3192-2 Graphics/APL
In-364E	14	3192 Graphics/APL
Ro-222	14	3278-2 (3 APL)
Sp-311	11	3278-2 (4 APL), 2 Tek 618
Bu-100	4	3278-2 (2 APL), 1 Tek 618
Ha-126	3	3278-2 (1 APL), 1 Tek 618
Ha-201C	4	3278-2 (1 APL), 1 Tek 618
Bldg223	11	3178-2 (1 APL)
Knox Library (Basement)	3	3278-2

Printers (Mainframe)

In-140	IBM 3800-3 Laser (215 ppm)
	IBM 3262 Impact (650 lpm)
In-141	Tek 4693D Color Prntr/Plotter
	Shinko CHC-743MV Clr Prntr
In-364	IBM 3268 Impact (APL)
Sp-311	IBM 3203 Impact (1000 lpm)
Ro-222, Ha-201B, Bu-100, Bldg 223	
	IBM 3262 Impact (650 lpm)

Computer Cen. VisLab, In-148

3 Silicon Graphics workstations
1 Silicon Graphics 380 VGX
1 Mac Quadra 700
1 HP 730 workstation
1 DECstation 5000
1 Sun SPARC 10/41

Learning Resource Centers

Hours of Operation

Open: M-F 830-1630
(Other access by arrangement)

GL-128	20 Mac Quadra 700 (Sys 7)
	6 PC 486/DX 50
GL-203	33 PC 486/DX 33
GL-318	19 HP 730
	1 PC 486/DX 33
In-151	11 PC 386 (25/33)
	1 Discover Scanner (PC)
	2 HP LaserJet IIISi
	2 Xerox 6085 workstation
	1 Xerox image scanner
	1 Xerox laser printer
In-371	6 PC 486/DX 33
	4 PC 386/25
Ro-262	15 PC 386/20
	2 Z-248 (286)

Points of Contact

	Room	Ext.
Dean, Computer & Information Services (Acting)		
Toke Jayachandran	He-D139	2392
ADP Security		
Jeff Franklin	He-D139	2469
Knox Library		
Maxine Reneker	Kn-105	2341
Computer Science micro & wkstns		
Al Wong	Sp-525A	2009
Operations Research micro labs		
Tom Halwachs	Ro-265	2413
Admin. Science micro labs		
Norm Schneidewind	In-311	2719
ECE micros & workstations		
Bob Limes	Sp-301	3216
Computer Users Council (CUC)		
Mike McCann, Comp. Center		2752
Dennis Mar, Secretary		2341

MIS Points of Contact

Applications Development & Support:	
Comptroller & Supply:	
Judy Harr	3498
Comptroller: Rhoda Lynch	3374
Dean of Instruction, Staff, Curricular Offices:	
Lloyd Nolan	3128
Network Services	
Codes 00x, 03x, 07	
Lonna Sherwin	2794
Codes 05, 21, 22, 53	
Lyle Munn	2794
Codes 03, 04, 06, 08	
René Lightcap	2195
Codes 42, 43 Joe Lopiccolo	2994

Computer Center Points of Contact

	Room	Ext.
Director		
Prof. Douglas Williams	In-129	2572
Administrative Assistant		
Mandy Drury	In-130	2574
Manager, Systems Support		
David F. Norman	In-118	2641
Manager, User Services (Acting)		
Dennis Mar	In-133	2672
Manager, Operations		
Roy Romo	In-132	2004
Manager, Visualization Lab		
Mike McCann	In-102A	2752
Manager, LRCs & Center Micros		
Kathryn Strutynski	GL-375	2696
Editor, Bulletin		
Larry Frazier	In-113	2671
User Registration and Accounting		
Irma Bozardt	In-147	2731
Ruth Roy, Manager	In-109	2796
Programming Cnsultnt.	In-146	3429
Shift Supervisor, Opns	In-140	2721
System Status (recorded msg.)		2713

NPS Computer Club

Club President:	
Helen Thompson	375-2065
MS-DOS:	
Chairman: Robert Jacobs	372-2981
Librarian: Bob Smith	899-9623
Mac:	
Chairman: Andy Melton	373-0695
Librarian: Steve Walker	
OS/2:	
Chairman: Chuck Bane	655-5668
Librarian: Jonathan Hart	656-8280
Amiga:	
Chairman: Josh Rovero	656-2084
Librarian: Dan Zulaica	656-2929

BBS: Closet Gouge I & II: 300/1200/2400 bps; 8-N-1; 655-8785 & 655-8787

Distribution: List 3, plus: 250-B3, 6-B4, 20-B13, 2-B15, B18, 12-F2, 10-F3, 9-F4, 1-F7, 1-F14, 5-FNOC Computer.